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ABSTRACT

This paper argues that school practices that put at-risk students and limited-English students with grade-appropriate students in heterogeneous groups may in fact be abusive and discriminatory. Significant access to instructional content can occur only if the material matches the skill level of the children. If a lesson is presented to a group of children who exhibit great individual differences in skills and knowledge, the lower performers do not have access to the content because they lack skills and knowledge needed to learn the content. Placement abuses can be identified by noting where students are placed in curricular sequences that are greatly discrepant with the students' performance. Student abuse can happen when schools install newly adopted instructional material. The essay closes by making the argument that these abusive practices based on individual differences become discriminatory when particular sub-groups of a population are selectively subjected to the abusive practice or when the likelihood of the abuse is far greater for one sub-group of the population than it is for other groups. In particular, Blacks, non-English speaking students, and at-risk children receive serious injuries from misplacement in instructional sequences. (JB)

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Academic Discrimination: Failure to Recognize Individual Differences

by The Study Group—International Institute for Advocacy for School Children
Nicholas Maddalena, Chair

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Introduction

Schools promote practices that give the impression that at-risk students and limited-English students have access to the same academic content presented to grade-appropriate students. This impression derives largely from **cooperative group efforts** and **heterogeneous grouping of students** (i.e., grouping low, middle and high performers for the same lesson). While heterogeneous grouping of students for some activities is important, significant access to the instructional content can occur only if the material matches the skill level of the children. If a lesson is presented to a group of children who exhibit great individual differences in skill and knowledge, the lower performers do not have access to the content because they lack skills and knowledge needed to learn the content. Their participation in the lesson is therefore superficial.

Practices that appear to provide children with access to the content through superficial interactions are abusive and may be discriminatory. These practices include:

1) using instructional material that is greatly beyond individual-student skill level; e.g., grouping children heterogeneously for instruction;
2) requiring parents to provide teaching through homework assignments.

Limited Access to the Content

We can make four major assertions that explain how a limited access to content contributes to academic abuse of children.

Assertion 1. If the material or the lesson requires the children to learn much more than they are capable of learning in the allotted time period, the curriculum is abusive.

An extreme example would be to present lessons that are appropriate for eighth-grade math to second graders. For them to perform adequately in a lesson, they would have to learn enormous amounts of information in each class period, not over many years.

If the curriculum requires an unreasonable amount of learning in a short period of time, the abuse is observed in the following ways:

a. The probability of children succeeding on any task the teacher presents is low. A high density of errors means that the children receive high-rate information that they are failures. Understandably, they develop negative attitudes about themselves and the subject.
b. If the later material in the program builds on the skills taught earlier, the children who have not mastered the earlier-presented material will continue to fail.
c. The failure implies that these students will be preempted from any activities or opportunities associated with the failed content or subject. (If the children fail math, they would not be serious potential candidates for any hard science, medicine, engineering, etc.)

Assertion 2. The high density of errors means that it is unlikely that the teacher will be able to correct the mistakes in a way that permits the children to retain the information. (If the teacher provides corrections on 60 errors during a period, the chance of students remembering the information on even half of them is unlikely.) If the teacher tries to "firm" students on content (i.e., go over and over the content until the students master it) the teaching is still abusive since:

a. The teacher will not be able to "teach" a lesson in a single period because of the amount of time spent on "drilling" children and repeating parts the children miss. Firming children on a single lesson may require two periods or more.
b. The density of errors is too great for children to retain much of the material, even after such firming. Therefore, the children's rate of learning will continue to be extremely slow.
c. Even if children apparently "master" a lesson, they will not have mastered the content because the firming does not provide a systematic building of information and skills from the first-grade level to the level required by the lesson. Rather, the firming is referenced to the various items the children miss. The firming, therefore, amounts to blind stipulation, which may result in children producing the correct "responses" but with inadequate understanding of what they are doing or why.

Assertion 3. As a rule of thumb, if the children do not produce at least 70 percent **first-time-correct** responses on the tasks and problems presented in the lesson, the material will tend to be abusive.

If children can perform at around 70 percent correct or above before receiving any firming or correc-

tions, the probability is great that the children will be able to master the material presented in the lesson. The amount of new learning required is not overwhelming. Furthermore, the children have confidence. Given that they understand whether or not they are performing adequately, they know that most of the time, they'll get the right answer or solve the problem correctly.

If the first-time-correct drops to 50 percent, they'll become tentative because they'll know that their answers are rejected by the teacher about half of the time. The amount of new learning required for these children is much greater than is required for children at 70 percent first-time-correct. If the first-time-correct percentage drops below 50 percent, students receive substantial amounts of information that they are failures. Also, the amount of new learning required for them to perform in the series of lessons is overwhelming, and the probability of the children being able to master the content (even after receiving extensive drill and practice) is very low.

First-time-correct performance can be easily measured. Present the content of a lesson to a group of students and carefully record their performance – their answers to the questions, their work in solving problems. If students make mistakes, tell them the correct answer and go on. Do not try to "firm" them. At the end of the lesson, compute the number of tasks (problems, questions, directions that required a response from the students) and whether the student response was correct or incorrect. The ratio shows the extent to which students of different ability levels were punished by the lesson.

$$\frac{\text{Correct Responses } \#}{\text{Total Tasks } \#}$$

Assertion 4. As a rule of thumb, the optimum placement for diverse students of the same age is **at different levels of instructional material,** not at the same level.

a. This assertion derives from the 70-percent-first-time-correct principle. If we used the 70-percent principle to place a population of students in an instructional sequence that progressively develops skills from simple to complex, children of the same age would place at different levels. Their placement suggests their history of learning. Some have learned more, some less, during the same period of time.
b. The appropriate initial placement of students implies both the appropriateness of the first lesson the students receive and the rate at which the students will progress. **Appropriate placement implies that the teacher will be able to teach students to mastery during the time allotted for each lesson.** Therefore, the teacher will be able to progress at the grade-appropriate rate. Note that lower-performing students who are appropriately placed will master material at a rate considerably faster than they have achieved in the past.
c. The fact that students are able to master the material presented by the teacher means that they understandably develop a more positive image of themselves as competent learners.

Note: This scenario assumes that the lessons continue to progress in a manner that permits students to **maintain** a 70-percent-first-time-correct performance. If the sequence is "uneven," the students would have difficulties, and would not always achieve mastery within the allotted time period; however, their performance would not be greatly inferior to the performance of younger students who were appropriately placed in the same lesson sequence, based on their 70-percent performance. The younger students would be high performers; however, they would tend to have the same difficulties as the older lower performers in the same sequence. The lessons, therefore, and not the children are creating the difficulties.

In summary, placement is abusive if the potential for student mastery of the material is low. Poor placement may force the student to perform at a much slower rate than would be possible if the student were placed appropriately; an inappropriate placement will lead to a much greater density of errors and failures and therefore promotes a negative self-image; the placement requires the student to learn superficial details because mastery is largely impossible.

Identifying Placement Abuses

School practices often create egregious abuses by placing students in curricular sequences that are greatly discrepant with the students' performance. One way to identify these abuses **is to compare achievement test performance with the content taught to students.** While abuses may not be evident for relatively small discrepancies, they would certainly be noticeable for large discrepancies. For example, the NAEP test of math performance disclosed that the average eighth-grader in California did not understand fractions, could not perform basic operations (adding, subtracting, multiplying) and therefore was pre-empted from understanding probability (as it is expressed mathematically) and ratios.

According to the 1985 California Math Framework, the eighth-grade math curriculum presented problems of the following types.

- Investigate square roots. Construct line segments of length, $\sqrt{2}$, $\sqrt{3}$, $\sqrt{4}$, $\sqrt{5}$, and so

on. Estimate square roots of larger numbers and check. Use the divide-and-average method with a calculator to get closer and closer to the square root of a given number.

- Write a set of directions for a younger student, explaining how to add 2/5 and 1/3. Then use a picture and write an explanation as to why you add fractions the way you do.
- Given a table of values, such as

-2	-1	0	1	2	3	4	5	10	100
-8	-5	-2	1	4	7				

find the missing values, sketch a graph, and find a formula by guessing and checking.

- Make a table, and sketch a graph of each function:

$y = 1/2x - 3$ $y = [x - 4]$ $y = x^2 - 5$
$y = x\,(x - 2)\,(x - 4)$ $y = 1/x$

- What are the possible results of rolling two dice and subtracting the number showing on the face of one from that showing on the face of the other in such a way that a non-negative result is obtained? Guess which result is more likely. Try the experiment 50 to 100 times and record your results. Make a chart to find the theoretical probability of each outcome.

The act of presenting this content to a large number of eighth graders in California is an obvious declaration of academic child abuse. The probability of students learning the material is about zero. The probability that the teacher could bring the students to a level of mastery is about zero: the probability that the students will be confident about their ability to learn the material is about zero. The amount of learning that would be required for the students to master the content of the first lesson is so substantial that they couldn't possibly be prepared for the first lesson without two years or more of careful instruction. If the first-time-correct performance of the students in the eighth-grade curriculum were measured, it would be far less than 50 percent – possibly close to zero.

California not only installed programs that created such academic child abuse; the state retained them for years, which means that the schools were apparently satisfied with the results. If the schools knew about the results, this decision was inhumane. If they did not know about their results, the educational decision makers were irresponsible.

Installing New Programs

A variation of this abuse occurs when the schools install newly adopted instructional materials. Even if the newly adopted material is reasonable in terms of its skill-development sequence, it may be perfectly unreasonable for the students at a particular grade level.

For example, the school adopts an instructional program teaching math in grades 1 through 6. The school installs the fourth level of the program in the fourth grades, the fifth level in the fifth grades and the sixth in the sixth grades, without regard to student performance. This procedure is the standard within the schools. It benefits the publisher of the instructional materials, but it may represent serious academic child abuse for the schools.

In the average school district, the average fourth grader is at least a year below grade level in math, for example. If the newly adopted math series presents grade-appropriate teaching, the average fourth grader would not benefit greatly from the content because the probability of the student mastering grade-appropriate content is low.

A far more sensible practice than tabloid placement of students by grade level numbers would be to identify the level that is appropriate for different students and place them accordingly.

A good instructional sequence permits mastery of each lesson, unit, or segment. For mastery to be possible for appropriately-placed students, the gradient of skill introduction must be both constant and accessible to the students. A poor program has a lumpy gradient, with much of what is presented not accessible to the appropriately-placed student. This fact is disclosed by placing students whose first-time-correct-response rate is 70 percent in the program and documenting the relative "unevenness" of the students' performance. If the program is taught as specified but is characterized by periodic dips in student performance (appropriately-placed students dropping to 50 percent first-time-correct or less on lessons or skills) the program is not well designed and should be discarded. It will result in students failing to learn at a rate that is suggested by the presentation of the content in the program. (The content may cover the fourth grade curriculum; however, it is unlikely that the appropriately-placed student will master this material.)

Discriminatory Practices Based on Individual Differences

Abusive practices become discriminatory when particular sub-groups of a population are selectively subjected to the abusive practice or when the likelihood of the abuse is far greater for one sub-group of the population than it is for other groups. Blacks, non-English speaking students, and at-risk children receive serious injuries from misplacement in instructional sequences and from practices that re-

quire parents to provide instruction in critical skill areas.

Heterogeneous grouping for instruction is a prima-facie discriminatory practice.

According to Assertion 1, a practice is abusive if it requires children to learn much more than they are capable of learning in the allotted time period. Heterogeneous grouping for instruction presents the same lesson to children of varying ability, including at-risk children and limited-English speakers. The probability of lower performers being able to learn enough to benefit fully from the lesson is far less than it is for grade-appropriate students. Therefore, the presentation of lessons to a heterogeneous group is discriminatory. **The grade-appropriate students have access to the content of the lesson; the lower performers don't.**

Assertion 2 suggests that the presentation is abusive even if the teacher attempts to "firm" students through additional practice and repetition. In a heterogeneous setting, the mistakes will be made overwhelmingly by the lower-performing children. By firming the mistakes **these children make,** the teacher is providing differential or discriminatory treatment. **The lesson is clearly not the same for these children as it is for the grade-appropriate students.** Lower performers are required to learn more than the grade-appropriate students; they are required to learn this amount during the same class period in which the grade-appropriate students are required to learn much less. The learning rate required for the lower performers is many times that of the higher performers, even though the lower performers have a history of learning at possibly five-eighths the rate of the grade appropriate students.

Even if this additional practice is provided, the probability of lower performers being able to master grade-appropriate content is very low, which implies another great difference in the lesson as it is received by the lower performers. The additional drill and practice does not result in mastery, simply in differential treatment.

Attempts to teach to mastery in a heterogeneous setting are discriminatory to all children. The curriculum is appropriate for grade-appropriate students. The rate of presentation would be appropriate for these students if all the corrections the teacher provided (and the pacing of the lesson) were referenced to the performance of grade-appropriate students.

This practice would be flagrantly discriminatory because it subjects the lower performers both to a lesson that is inappropriate for them and to pacing that is inappropriate for them. By attempting to bring everybody in the class to mastery, the teacher paces the lesson according to the performance of the lowest performers in the class (the students who are farthest in skills and knowledge from the content and who therefore make the greatest number of mistakes and who require the greatest amount of repetition). This pacing is highly inappropriate for the grade-appropriate students. Lessons will require at least twice the amount of time they would require if they were referenced to the performance of the grade-appropriate students.

The result is that grade-appropriate students are the targets of a different type of academic child abuse. They are in a program that is appropriate for their skill level, but they are being slowed to the pace of low-performing children who have a very limited possibility of mastering the lesson content. When this practice continues for several school years, there are no grade-appropriate students. By fiat, higher performers slowed down to half their potential learning rate.

Attempts to make parents **responsible** for the academic learning of their children are discriminatory and irresponsible. Certainly, parents should be informed about what the schools are teaching. Specific training for parents of at-risk children is extremely beneficial. Involving parents in the school operation is also beneficial. However, **suggestions that the parents are responsible for the child's learning of academic skills are discriminatory.** The reason is that the parents with children who are well prepared have provided for much of that preparation. Parents of lower performing students do not know how to provide for such preparation and may not be in a setting that permits them to be of much assistance in the child's academic learning. Often the parents who could benefit most from instruction about how to work with their children on academic learning are the parents who most probably will not be available for the training. Similarly, the parents who are least able to help their children in a subject such as reading or arithmetic are the parents who may not be proficient in the subject.

If the involvement of parents is suggested as a "necessary" element for student success, the involvement requires differential amounts of work from different parents, with the parents least able to provide the help responsible for the greatest amount of "teaching."

Consider the heterogeneous setting. The at-risk students in the classroom are totally misplaced. The schools tell the parents that they should work more with their children. For the parents of grade-appropriate students, this may involve working on a relatively small set of difficulties. Parents of the at-risk child are required to have a more thorough understanding of the content (because they are required to teach more), devote more time (because the firming would require considerably more time than that needed by the grade-appropriate student) and ac-

cess a larger number of resources. The goal is unreasonable and greatly discriminatory.

Similarly, any "assignments" that clearly require teaching or help from parents is discriminatory and abusive. An example of such an assignment is homework that students would probably not be able to complete without help. If homework is assigned to heterogeneous groups, the same difficulties that the lower performers have in the classroom are now extended to home. The probability of help being available is far less than it is in the home of the grade-appropriate student.

For at-risk children or limited-English students, the probability should be very great that: a) the students are able to do the homework assignment independently; b) the homework assignment requires a manageable amount of time. Laborious assignments are not necessary if the curriculum is reasonably well designed. A rule for elementary schools is that there should be "study" periods in school that provide students with sufficient time to complete all their homework assignments.

The more the performance of children relies on extensive homework assignments, the more the practice provides a selective advantage for higher-performing students. If much of the learning that is required of students is achieved through homework assignments, the practice is greatly discriminatory.

In summary, many school practices contribute to placement abuses that can be identified by comparing test performance with the content taught to students. Large discrepancies between expected and actual student performance, as in the case of the 1985 California Math Framework, illustrate placement abuse that leads to widespread academic failure. Heterogeneous grouping is also abusive and discriminatory since sub-groups such as urban blacks, non-English speaking, and at-risk children are not likely to have equal access to the content of each lesson compared to grade-appropriate students. The result is that both groups suffer discrimination. Grade-appropriate students are slowed down and exposed to extensive, ineffective firming procedures. Their lower-performing peers have little chance of success in mastering materials that require an inordinate amount of learning.

The suggestion that parents become more involved in the education of their children is reasonable. However, parents cannot be expected to have the expertise, time and resources necessary to significantly improve the academic performance of their children. This is especially true for at-risk parents who may be ill-prepared and may need much assistance to significantly improve the child's academic learning. All parents cannot contribute equally to remedy the problems caused by schools. The heavier burden falls upon those parents least able to provide the help. That's discriminatory.

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Leading the fight against academic child abuse

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